

CLAIMS

5      What is claimed is:

- 10      1.      A method of communicating with a mass storage device, comprising:  
         receiving ATA/ATAPI signals from a mass storage device into a bridging  
         circuit;  
         converting the ATA/ATAPI signals from the mass storage device into USB  
         signals using the bridging circuit; and  
         outputting the USB signals from the bridging circuit.
- 15      2.      A method according to claim 1, wherein the bridging circuit is provided in a  
         single, bridging chip.
- 20      3.      A method according to claim 1, wherein the bridging circuit is provided on  
         a motherboard of the mass storage device.
- 25      4.      A method according to claim 1, wherein the bridging circuit is provided on  
         a secondary board.
- 30      5.      A method according to claim 4, wherein a mass storage device  
         motherboard outputs ATA/ATAPI signals, and wherein the secondary board  
         receives the ATA/ATAPI signals from the mass storage device motherboard and  
         converts them into USB signals.
6.      A motherboard for a mass storage device, said motherboard comprising:  
         input logic configured to receive an input signal from a read unit of the  
         mass storage device;  
         a bridging circuit configured to receive the input signal from the input logic  
         and convert the input signal into a USB signal; and  
         output circuitry configured to output the USB signal from the motherboard.

7. A mass storage device motherboard according to claim 6, wherein the bridging circuit comprises a bridging chip for converting the input signal into the USB signal.

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8. A mass storage device motherboard according to claim 6, wherein the bridging chip comprises:

an ATA/ATAPI interface configured to receive ATA/ATAPI signals from the input logic;

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a disk interface configured to receive ATA/ATAPI signals from the ATA/ATAPI interface;

a serial interface engine; and

a USB physical interface transceiver configured to receive signals from the serial interface engine and output USB signals to a USB interface.

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9. A secondary board configured to enable communication between a mass storage device motherboard and a host motherboard, said secondary board comprising:

a connector port for receiving signals from the mass storage device motherboard;

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a bridging circuit for converting signals from the mass storage device motherboard into USB signals; and

a USB connector port for outputting the USB signals to the host motherboard.

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10. A secondary board according to claim 9, wherein the bridging circuit comprises a bridging chip configured to translate the signals from the mass storage device motherboard into USB signals.

11. A secondary board according to claim 10, wherein the bridging chip comprises a USB physical interface transceiver, a serial interface engine, and a disk interface.

5 12. A secondary board according to claim 11, wherein the disk interface receives ATA/ATAPI signals through an ATA/ATAPI interface, and wherein the ATA/ATAPI signals are converted into USB 2.0 signals and are output to a USB Interface through the USB physical interface transceiver.

10 13. A bridging chip comprising:  
an input configured to receive ATA/ATAPI signals;  
conversion logic configured to convert the ATA/ATAPI signals into USB signals; and  
an output configured to output the USB signals.

15 14. A chip according to claim 13, wherein said input comprises an ATA/ATAPI interface arranged to receive the ATA/ATAPI signals and a disk interface configured to receive ATA/ATAPI signals from the ATA/ATAPI interface; wherein said conversion logic comprises a serial interface engine and a USB physical  
20 interface transceiver, said interface transceiver being configured to receive signals from the serial interface engine and output USB signals to a USB interface.

25 15. A chip according to claim 13, wherein the chip is located on a mass storage device motherboard.

16. A chip according to claim 13, wherein the chip is located on a secondary board.

30 17. A chip according to claim 16, wherein the secondary board is arranged to receive ATA/ATAPI signals from a motherboard of the mass storage device.

18. A method of converting signals from a mass storage device into USB signals, said method comprising:

- receiving a signal from a mass storage device into a bridging chip;
- 5 converting the signal from the mass storage device into a USB signal;
- outputting the USB signal from the bridging chip.

19. A method of converting signals according to claim 18, wherein said bridging chip is located on a motherboard of the mass storage device.

20. A method of converting signals according to claim 18, wherein the bridging chip is located on a secondary board arranged in communication with a motherboard of the mass storage device.

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